TRANSACTIONS OF SOCIETIES.

ART. XII.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1866. *June 6. Pyæmia.*—Dr. HAMILTON reported the following case: On Wednesday morning, Jan. 10, 1866, I was requested to visit W. S., aged 14 years, rather large, and of fine, healthy appearance. On inquiry, I learned that on the previous Saturday he was engaged nearly all the afternoon in skating; that he became very cold soon after going upon the ice, and so continued; that he had three or four rather hard falls, and returned, perfectly chilled, to his home. The subsequent morning, Sunday, the 7th, he began to complain of general soreness and aching, slight pain in the head, and alternate sensations of chilliness and fever. On the 8th, an eruption over the surface of the body was superadded to the symptoms of the previous day. On the morning of the 9th he felt much better; but in the afternoon he was worse, the fever and general malaise being a good deal increased, and during the night he complained of a very severe pain in the right groin.

When I first saw him on the morning of the 10th, he was confined to bed, and complaining of very severe pain in the groin and slight headache. Fever, not very active; the rash was still very distinct, and resembled precisely what is seen in scarlatina, though no other symptom of this disease was present; some indistinctness of speech was also noticed. The groin, on pressure, was very tender and slightly swollen, the swelling diffused, rather than circumscribed. On the 11th I learned that he had been quite delirious during a part of the night, and that certain spasmodic twitches, to which he had for the past five years been subject, had occurred since his illness more frequently than usual. These movements were confined chiefly, or exclusively, to the upper extremities, the head, and features of the face, and consisted in a sudden retraction of the head, distortion of the eyeballs, retraction of the corner of the mouth to one side, and elevation of the arms, violently extended, above the head. Medical treatment, directed to the upper part of the spinal cord, as the probable seat of this affection, had long ago been tried, without benefit; but, as his health and intelligence were good, no attention had latterly been given to it. The groin was rather more painful and swollen than the day before; rather more fever; rash disappearing, but several reddish blotches were noticed upon the right elbow. On Friday the pain in the groin was nearly gone, but the ankle of the left limb had suddenly become very painful, some swelling of the joint was noticed, and a large red, ovoid blotch occupied about two square inches of the skin nearly two inches above the external malleolus. There was a scab, just below the ankle, twice the size of that of a fully developed vaccine pustule, with matter beneath, caused by the pressure of a boot; speech more imperfeet; delirium the previous night very great; efforts to leave the bed almost incessant; slight delirium during the day. On the 13th, 14th, and 15th the symptoms the same as on the 12th, but the pain near the ankle was more intense, and so much delirium that it was almost impossible to keep the patient in bed. On the 16th, rather less fever, less delirium during the night, not quite so much pain at the ankle, but rather more in the groin, with increased swelling, extending somewhat into the thigh; desire for food nearly gone. 17th and 18th, same condition as upon the previous day.

On the afternoon of the 19th a severe chill occurred, followed by great nervous irritation, high fever, and great general suffering. It may here be incidentally stated that mustard plasters, applied after the chill to the inside of the legs, produced at the time but a moderate degree of redness, which faded on the second day; and yet on the next Friday, just one week from the time of application, full vesication took place. 20th, high fever, very delirious, but at times answers quite well; increased difficulty of articulation. On the 21st a swelling was observed on the right elbow, where the blotches had previously been seen, and on examination of the left ankle the same thing was found to have occurred; the swellings in both places evidently contained fluid. A third swelling, similar in character, was discovered in the right iliac region, a few inches above the groin. A slight perspiration, the first seen, appeared upon the forehead, face, and neck. On the 24th a crackling of the knee-joints, on motion, was distinctly heard at some distance from the bed; great aversion to food.

From Jan. 25 to Feb. 3 his situation was somewhat similar to that of the few previous days; always more or less delirium, night and day; sweat confined to the head, and upper part of the trunk; an extraordinary crackling on movement of the knees, ankles, thighs, wrists, elbows, shoulder-joints, or neck, loud enough to be heard in any part of the room. Feb. 4, the skin over the swelling near the left ankle is becoming quite dark and mottled; the patient no longer draws up his legs, either from want of power or from fear of increasing his suffering; the right groin and thigh still swelling, and more painful; some complaint of the left groin, which is somewhat tender and slightly swollen; the abdomen is also slightly swollen, has in fact been so for some days past. 8th, the feet have during the past few days become œdematous; and on the 9th the urine was tested, and found to abound in urates. 10th, less swelling of the feet; patient has for two or three days and nights past sat in an arm-chair, resolutely refusing to be moved; cannot at present bear the slightest movement of either of his lower limbs. 11th, the swelling upon the right elbow broke, and discharged thick pus. 12th, swelling of the feet nearly gone; thigh still growing larger, with increasing pain; slight increase of appetite; in the afternoon fainted, apparently caused by suffering and the long-continued upright position; the crackling of the joints continues, but is not so audible. The 12th, 13th, and 14th showed no important changes. On the 15th the abscess near the left ankle broke, and discharged freely. On the 17th the abscess ceased discharging. Pulse is now becoming a good deal weaker and more frequent, and patient shows less muscular strength.

On the 19th it was evident that an immense abscess was forming in the right thigh. A swelling of considerable size was also discovered upon the right nates, not far from the anus, its surface much abraded and ulcerated;

and now, for the first time, a shortening of the left leg was noticed, and the foot inclined inwards in a manner that had not been observed before; no appetite, and flesh wasting rapidly; has consented, after much persuasion and threatening of the serious consequences to himself of a refusal, to be replaced upon his bed. On the 23d matter was found discharging from the swelling upon the nates, showing the existence of another abscess; right thigh enormously swollen, pain extreme.

On the 26th the abscess of the thigh broke, and discharged in a very short time some pints of matter. On the 3d of March a small swelling, similar to the others, was found upon the right wrist; the abscess upon the abdomen, circular in form and about three inches in diameter, seems disposed to flatten and shrink; debility rapidly increasing; much œdema of both limbs, from the groins to the toes. On the 10th the abdomen had become quite tympanitic, and the œdema greatly increased On the 14th, 15th, and 16th fever was very high, and on the 17th erysipelatous inflammation, commencing at the orifice of the abscess in the right thigh, spread with great rapidity downward to the knee, and upward beyond the groin to the distance of several inches upon the abdomen. On the 18th the inflamed surface became quite dark, simultaneously with collapse; and on the 19th death terminated the most painful attack of disease, duration considered, that it has been my lot to witness.

No autopsy was made, but, on examination, the left thigh was found to be dislocated at the hip-joint, the result, doubtless, of an abscess within the joint, destroying the ligamentous connections, although but little pain was at any time referred to this region.

We have preferred thus to relate the actual progress of this remarkable case, without embarrassing or unnecessarily extending the account by an intercurrent detail of treatment, which did, in fact, little more than afford partial relief to the excruciating and persistent suffering to which the patient was doomed. The case did not at first present any sufficient grounds for anticipating the scene of anguish and death that was at so remote a period to ensue. The primary symptoms were nothing more than we often see as the consequence of long-continued exposure to cold, and the pain in the groin, complained of at first, was thought to have been produced by strain of the part whilst skating, or perhaps at the time of falling upon the ice. The sudden and almost entire disappearance of the pain from the groin, and its equally sudden reappearance within twenty-four hours, at or near the left ankle, suggested the idea of rheumatism. When, however, the skin at the seat of pain was found to be already inflamed, and the scab, with its subjacent pus, was discovered below the ankle, doubts once more arose as to what might be the future course and issue of the attack. Again, the delirium was of extraordinary character and violence, and seemed to be in no just proportion with the other general symptoms or local affection, and this circumstance, taken in connection with the oft-recurring spasmodic movements to which he had so long been subject, tended still further to embarrass the diagnosis, by suggesting violent irritation or inflammation below the base of the brain as the most rational solution of some of the more prominent phenomena observed. The symptoms, in part, bore so strong a resemblance to what has been seen in some cases of cerebro-spinal meningitis, as at one time to lead to the suspicion that this might be the real malady, complicated with local phenomena occasioned in the manner before intimated. When, at length, it became evident that deposits of pus existed beneath the swellings upon the right elbow and left ankle joints, we could no longer doubt the existence of pyæmia, complicated though it might be with a diverse pathological condition.

The treatment before the development of pyæmia was moderately antiphlogistic, yet supporting, and requires no detail. Subsequently the medication and alimentation were, so far as practicable, tonic and restorative, quinia and iron being the principal medicines employed for this purpose. Morphia had to be freely given, and was the chief agent in procuring some respite to the excruciating pains endured by the patient.

A question of much interest in this case is in reference to the cause of the pyæmia. Had the chilliness, fever, headache, and malaise of the first day of the attack their origin in a then-developing pyæmia? or was the latter subsequently engrafted upon a disturbed condition of the organism (produced by long exposure to cold), and had its origin in an accidental circumstance, such, for instance, as the purulent scab spoken of? or can such a change in the condition of the blood, from intense cold, arise, as, conjoined with bruises from falling, may have an agency, when occurring in an already disturbed state of the system, in engendering pyæmia?

Oct. 5. Deformities after Disease of the Hip-joint. (With five woodcuts.)—Dr. H. LENOX HODGE called the attention of the Fellows of the College to some cases of deformity after disease of the hip-joint, in the following remarks:—

The ordinary deformity in bad cases, especially when badly treated, or left to themselves, is familiar to all. We see every day such children moving, as best they may, upon crutches, with the body erect, but the affected limb drawn forward and upward, away from the ground; not only useless, but liable to various injuries from its prominent position. If such a limb be examined, it will be found small and wasted. The mobility at the ankle and knee is usually normal, while that at the hip-joint is partially or oftentimes totally lost. On the outer or inner part of the thigh, in the groin or in the sacral region, depressed scars will usually be seen, marking the location of old abscesses. If the interior of the joint be looked at after death, the bones of the pelvis and the femur may be found firmly united by bony union either at the acetabulum or some abnormal position; or else the cartilaginous surfaces merely roughened, and fibrous bands existing within or outside of the capsular ligament, and the muscles, on the front and inner part of the thigh, especially the sartorius, biceps, and adductors, strongly contracted; or at times the joint itself but slightly changed from its normal condition, and the position of the limb entirely due to the contraction of the muscles.

Sometimes not only one but both hips have gone through the same disease, and a similar deformity cripples both limbs. Now the child cannot stand erect, and only after much practice can balance himself in a squatting position. Crutches are of but little service to him; few of those thus deformed can learn to use them. In this plight they hide themselves in some dark corner, or learn to crawl about upon their hands and feet. A few, after much effort, acquire the power of walking slowly and awkwardly when aided by their hands placed on a chair which they push before them; or else by their hands placed upon their knees. If one limb be much shortened by displacement of the head of the femur, or if the thigh and leg have assumed some unusual position from long-continued habit, the compensating deformities in other parts of the body are very varied, and the attitude of the child in standing, and the efforts at walking, strange and pitiable.

I have had photographed a few of such cases which have come under my observation at the Children's Hospital, and elsewhere.

CASE I. John Henry Bryant, aged 12 years. One day, while visiting a child with club-feet, I saw a bright face in an obscure corner of the room, and upon asking, Who is that? the mother replied, "It is another of my cripples: nothing can be done for him; he hates to be seen, and hides himself away during the day." When this child was only two or three years old, inflammation of the hip-joints had begun, and, passing through its stages in both hips, had left him thus deformed. A deep scar will be seen upon the outer part of the thigh; both thighs were in the same line, and at right angles to the body, in which position they were firmly fixed. The mobility at the knee and ankle-joints was greater than normal; and the muscles of the forearms, arms, shoulders, and chest, exceedingly developed. This resulted from his mode of standing and of walking. When he stood, he placed his hands upon his knees, so that his legs, arms, neck and head, were in a straight line, and represented his height. In this way he substituted his arms for his thighs and spine, and thus removed all his weight from the hip-joints. In this attitude he could slowly move across the room by raising himself on the balls of his feet, and then bringing one leg in advance of the other simply by the movement at the knee, as is shown in Fig. 1.

Fig. 1.

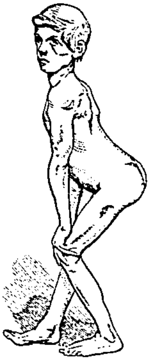
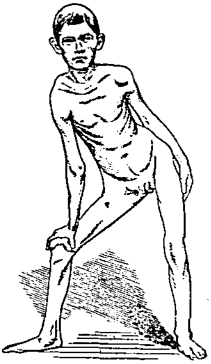


Fig. 2.



CASE II. William Arthur Johnson, aged 13 years. Scars and fistulous openings are seen upon the thigh and groin of the right limb. The left was perfectly sound, except that, owing to the peculiar position which he was so often forced to assume when he stood, there was great relaxation of the ligaments around the hip-joint, and great mobility there. The right hip-joint, however, was perfectly rigid, and the limb turned out from the median line, the foot being extremely everted, and the thigh much drawn upward, so that it was at right angles to the body. When aided, he could stand erect upon the sound limb, and then the right foot would hang at about a line with his left knee, and the right knee, on a line with the pelvis, would project at the right side. This deformity resulted from his having been allowed, while in bed, during the long period of suppuration, to draw the thigh up, and let it fall upon its side. His position, when standing unassisted, was as seen in Fig. 2; the sound limb nearly vertical, and the body inclined to the right toward his deformed and everted limb, receiving support from the right arm, with the hand on the knee. He could thus, for a short distance, make some attempt at an awkward walk by swinging the deformed limb around in front of the other, thus causing him to face to the left; then carrying the sound limb forward, and then repeating the swinging movement.

CASE III. Charles Hancock, 7 years. In this case both hip-joints had lost all their mobility. The thighs were drawn up toward the body, and adducted so that the knees nearly touched each other. He could not stand alone, but with the aid of his hands resting on a chair, could hold himself in an erect position. Fig. 3 represents him in this position, and exhibits very well the concavity in the lumbar region of the spine, common to all such cases, and compensating, to a certain degree, for the angle which the thighs make with the body.

Fig. 3.

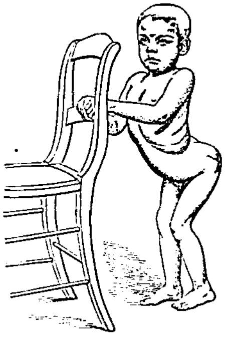
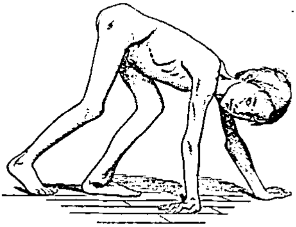


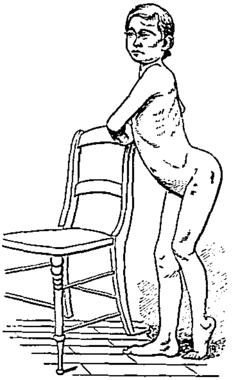
Fig. 4.



CASE IV. John Stitt, aged 12 years. With him some slight motion was still retained at both hips, but both had been long inflamed. His thighs were drawn up toward the body, and the deformity was very similar to that of Charles Hancock. Fig. 4 is of interest in showing how these poor children move from place to place; how they walk, or rather crawl. The spine, it will be noticed, is perfectly straight in this position. The curve above alluded to depends simply upon the position. The spine attains great flexibility, but does not become deformed.

CASE V. Samuel Ragan, 12 years. He had the right hip sound, but the *left* hip deformed. As he stands (see Fig. 5), the concavity of the lumbar region, throwing the dorsal portion of the spine far in advance of the buttocks, exhibits the deformity, which is really due to the hip-joint. This curvature of the spine and pelvis enables him to bring the thigh nearly to the vertical line, and parallel to its fellow. The limb also is much shortened, as is seen by the knee being higher than that of the opposite side, and by his standing on the toes instead of the sole of that foot. In this way, not only did he stand, but also was able to make some movements as in walking.

Fig. 5.



The deformity in such cases as I have presented to you, increases with age. The limb, long held in an unnatural position, and seldom or never used, is slightly nourished, and soon ceases to grow with the rest of the body; the muscular tissues waste away, and lose their peculiar function of contracting at will. The fibrous bands formed around and within the hip-joint become tighter and stronger, and the member more and more useless. As the child becomes older, the sense of his helplessness and deformity wears upon his mind; nervous irritability embitters his life, and hastens the ill-health which is sure to follow close confinement in those whose constitutions have already been impaired by scrofula, or long-continued inflammation and suppuration.

At the Children's Hospital of this city, we are striving to rescue some of these poor deformed children from their forlorn condition. We find that when the deformity depends merely upon muscular contraction, and when it has not been of long continuance, it may be overcome by simple extension by means of a weight, which, after a time, may be substituted by some such splint as Davis'.

When the deformity has existed for a long time, even when purely muscular, it is advisable to etherize the patient; and as the muscles become relaxed, to straighten the limb, and then accustom it to this position by extension. But in many of these old cases, the long-continued contraction has caused a permanent shortening of the muscle. This shortening cannot be overcome by relaxation, and a subcutaneous division of muscular or fibrous tissues, myotomy or tenotomy, is advisable. When, in addition to the muscular contraction, there are fibrous adhesions within and around the hip-joints, these must be broken up by manipulation while the child is under the influence of ether. Any attempt to straighten such a limb by screws, or other mechanical appliances, simply tortures the child to no purpose.

By exercising our best care and judgment, and notwithstanding that many of our little patients have been weak and scrofulous, with an excitable nervous temperament, our operations have been uniformly successful, and the results have surprised and delighted the patients and their friends.

They are satisfied and pleased that the deformity is removed, while we hope and strive for something more. The limb ought again to become a useful member of the body. But in old cases it is very hard to teach the child to use it. Though perfectly free from pain, the muscles do not respond to the will, and all of them have lost much of their old activity. Their power can be regained only after repeated efforts. The child must be encouraged to try and try again. He must *learn* to walk. The process is a tedious one, and before it is completed some intercurrent disease may carry off these delicate little ones. In August last one of the most troublesome of our cases died of dysentery about eight months after his mother, with joy, had taken him home from the hospital free from his sad deformity.

Case of Monstrosity.—Dr. F. H. GETCHELL related the following case of this:—

On the 28th of May I was sent for to see Mrs. M——, æt. 19, who had been taken in labour, accompanied with some flooding. It was her first child. On my arrival I found the pains regular, and very severe; the os well dilated, and soft. The labour progressed slowly, but terminated without assistance in twenty hours after I first saw the patient, with the birth of a monster. It was born alive, but died in about half an hour. On examining the child I found that, besides having club-feet, and spina bifida, it had all the abdominal organs outside the abdomen, covered only by a thin serous membrane resembling the peritoneum. There was neither anus nor genital organs. I questioned the mother as to the cause of this strange deformity, but she could assign none; she expected to have given birth to a perfect child. She had felt the movements of the child up to a few hours before it was born.

Nov. 7.—*Case of Leucinosis.* (With three woodcuts.)—Dr. HORATIO C. WOOD related the following case:—

I was first called to see Mrs. N—— in the fall of 1865, on account of some trivial ailment. She was at that time unmarried. She was of medium height, and very robustly built, weighing about 130 pounds. She had a complexion of medium fairness, brown hair, and was, for a woman, very strong and muscular. She had been brought up in the country, having come to the city a few months previous. Her health was generally good, but she had evident signs of a scrofulous taint, such as enlarged lymphatics, but had never had, that I learned, any decided outbreaks of the diathesis. Her age was 20 years; her parents were Pennsylvania German.

On the 5th of June, 1866, I was again called to see Mrs. N., who was then in the second month of her pregnancy. I found her presenting no abnormal symptoms whatever, excepting constant vomiting, which occurred not only when she took food, drink, or medicine, but also every few minutes, even when her stomach had been long emptied. There was a great deal of nausea and violent retching. The functional activity of the kidney, liver, &c., was apparently perfect. The urine contained no albumen, but was not examined for urea. Various anti-emetics were administered without effect; but on the fourth day of the attack, a blister to the epigastrium, dressed with sulphate of morphia, afforded relief. As soon as sufficiently recovered the patient went to her father's in the country, where she remained for about three months. During this time, as her mother informed me, she was constantly troubled with vomiting, and on one occasion was for four days unable to retain anything on her stomach. Her mother stated she threw up also very dark matters. During the whole period of her stay in the country, there was but one week in which she was able to go about freely.

On the 9th of October, 1866, I was summoned to see a little cousin of hers, in whom, in a short time, well pronounced symptoms both of scarlatina and diphtheria developed themselves. He had large diphtheritic deposits, not only on both fauces and tonsils, but also on the velum, and a general scarlatina eruption, which was followed by thorough desquamation. Although desperately ill for a time, he finally recovered. On going into his room one day, when the disease was at its height, I found Mrs. N. sitting by his bedside, where she indeed spent a great deal of time both before this and during the remainder of his illness. At this time she told me she still suffered daily with vomiting and general wretchedness, although she appeared perfectly well, not at all emaciated, and was in the best of spirits. Monday evening, October 22d (a little over two weeks from her first exposure), I was summoned to see Mrs. N., and found her in bed. Her skin was in all respects normal; her pulse about 80. According to her statement, her urine was normal both in quantity and quality; her only complaint was her constant vomiting. She had no headache, although she had had some little the day previous. She positively denied having had anything like a chill. She had vomited a good deal on Sunday, but was sufficiently well to spend the evening out. The substances rejected were all *ingesta*, with mucous and watery secretion.

Tuesday morning. No change; had had a bad night, vomiting constantly; everything taken into the stomach came up instantly. There was little or no nausea between the spells, which occurred from five to twenty minutes apart, and were accompanied with violent straining. Urine passed freely and without difficulty; not decidedly diminished in quantity; normal to the eye; was tested carefully for albumen, but contained none; was not tested for urea.

Wednesday morning. Had passed a bad night, with some little tendency to wander. No essential change in her condition. About eight o'clock the previous evening her friends had noticed dark matters in the fluid thrown up by her, and these had increased constantly. Bowels not open yet, the purgatives ordered having been rejected. The paroxysms of vomiting were as violent and frequent as ever, but now were accompanied with the rejection of large quantities of watery secretion, and a peculiar black fluid resembling, in physical characters, the black vomit of yellow fever, and depositing, on standing, large black flakes, which, under the microscope, were seen to be composed of dark amorphous matter, and numerous, variously altered, and crenulated red blood-corpuscles of the same tint as the amorphous portions. The amount of this fluid thrown up during Tuesday, Wednesday, and Friday, was very considerable; frequently it came up at intervals of five minutes, and at times more than half a pint was rejected at once. During the previous day all the various anti-emetics were tried without any effect. The following drugs were among the remedies: creasote, lime-water, calomel, oxalate of cerium, ipecacuanha, sulphuric acid, sulphate of morphia, opium suppositories, &c.

Thursday morning. The patient, during the night, had shown a great tendency to fall asleep immediately after the cessation of an attack of vomiting, and now there was well-pronounced heaviness—amounting, indeed, to hebetude. An injection, administered the previous evening, had caused the passage of lightish, somewhat clay-coloured stools (according to her mother); conjunctiva icterode; skin scarcely perceptibly yellowish; normal as to temperature and moistness; tongue perfectly clean, not dry—perhaps a little large and flabby, otherwise normal. A 12-inch Chapman ice-bag was now applied to the spine, with its upper end at about the fifth cervical vertebra. It was tried faithfully through the entire day, a half hour on, and half hour off alternately; but without any sensible effect.

Noon. Pulse 120, not feeble; no tenderness was discoverable over any portion of the thorax or abdomen. On percussion over liver the amount and also intensity of the dulness was found to be abnormally small; the upper line of dulness anteriorly was about the sixth rib; it was almost impossible to make out the lower line, owing to the colon being much distended with flatus, and the pushing up of the intestines by the gravid uterus; the lower edge of the liver was, however, certainly up under the ribs. *Evening.* General condition the same. The blister on the epigastrium was ordered to be dressed with sulphate of morphia, and an injection of f℥iss of castor oil, and f℥ij of turpentine administered, which brought away (according to her mother) copious stools of nearly the *normal colour*, but *darker*. Some urine which I saw in the chamber was apparently thick with urates, but unfortunately I did not examine it save by inspection.

Friday morning. Marked jaundice; skin normal, save in colour; hebetude much more marked; vomiting more noisy, drier, with marked decrease in the amount of altered blood rejected. Amount of liver dulness certainly less than the previous day; no abdominal or thoracic tenderness; pulse the same; the patient's strength very good. Mercurial inunctions were resorted to, and a drop of croton oil was placed upon her tongue without effect.

Saturday morning, 1 *o'clock.* About an hour since patient had one or two convulsive seizures; at present, drowsiness excessive, passing into semi-unconsciousness, with great restlessness and gritting of the teeth. 2 *o'clock*, patient unconscious, with terrible spells of dry, noisy vomiting every few minutes, and constant tossings, which soon after passed into fits of screaming, when she would yell so loud that she could be heard in the street a square off, at the same time wildly throwing herself about the bed. At this time she evinced great muscular power, and was so sensitive that touching her excited her very much; it became necessary to fasten her in bed with a sheet. Pulse 130, not feeble; tongue moist, not furred; no heat or dryness of skin; urine very scanty, clear, no albumen, had to be drawn off with a catheter. At consultation[1] it was decided to put the patient under chloroform, and bring about abortion.

---

[1] On Wednesday evening the case appearing as though it were yellow atrophy of the liver, not being willing to assume the responsibility either of a prognosis or of the feared result, I requested a consultation; and the next morning met Dr. J. M. Da Costa by appointment. The diagnosis was made out as probable yellow atrophy, and a prognosis given in accordance. At the same time the possibility presented itself that the jaundice was secondary to, and caused by the vomiting, which, in turn, was the result of uterine irritation. It was this, with the patient's strength, which induced us to attempt premature labour. Of course, it was performed with the consent of the family, who were told distinctly that even it offered scarcely a ray of hope.

The patient, although unconscious, violently resisted the administration of the chloroform—screaming, tearing away the sponge with her hands, throwing herself around, &c., but readily came under its influence, becoming quiet and utterly passive in our hands, and ceasing to vomit. The effect of the anæsthetic went off in a little while, when the vomiting, fierce screaming, and restlessness all came back as before. Chloroform had at this time no influence on her pulse; ether seemed to strengthen it.

On examination with the finger, it was found that the neck of the uterus was almost entirely softened down, and the os was sufficiently open to admit the fore-finger, and allow a head presentation to be diagnosed. Tyler Smith's method of causing premature labour was employed. The cold and hot water douche alternately were faithfully applied for several hours, conjoined with frequent irritation of the os uteri by the finger. At six P. M. but little progress had been made; the os did not feel materially different, excepting that it was now sufficiently open to admit the tips of two fingers.

About this time the cord began to protrude; the pulsations in it were very strong, showing that the child was still alive; they ceased, however, before 10 o'clock. The patient was allowed to rest until 9 A. M., when no further progress having been made, a piece of sponge-tent was introduced into the os.

Condition of patient at 9 A. M. was as follows: Jaundice increased; skin not abnormally hot or cool, rather dry, approaching a lemon-yellow colour, with purplish blotches on the limbs. Pulse 130, tolerably strong. Unconsciousness complete, with every few minutes fierce screaming fits, in which she would hurl herself about the bed, raise herself into the sitting posture, throw her arms and even feet wildly around her, and apparently try to bite those restraining her, all the time yelling and screaming so that she could be heard a square off. Very little vomiting. Pupils dilated, answering sluggishly the stimulus of light. Dulness over the liver decreased, scarcely perceptible over a breadth of two inches.

12 P. M. Pulse 130, moderately strong. Screaming fits still more violent, with great restlessness, and gritting of the teeth in the interval. Os considerably dilated. A larger piece of sponge-tent was now introduced into the os, and soon worked its way up into the uterus. At this time I drew off some 10 f℥ of urine which had been secreted in about twelve hours. For chemical characters of this, see hereafter.

1 P. M Labour-pains evidently commencing.

2 P. M. Pains stronger; vomiting ceased. Otherwise no change.

At 4 P. M., the head being well down in the pelvis, I applied the forceps, and, without any difficulty, delivered her of a very well-formed fœtus, which was not in the least jaundiced. The afterbirth came away immediately, the uterus contracted firmly, and no blood was lost.

5 P. M. The premature labour has apparently produced no effect; the great sensitiveness of the surface has not in the least abated, and the screaming fits are as fierce in proportion to the patient's strength as ever.

6 P. M. Mouth very dry, with sordes. Pulse 160, much more feeble. Breathing, about 36 per minute. Heart sounds feeble, approximating in character. Pupils, about as in the morning. Skin not markedly hot, dry, or cool. Patient's strength evidently failing, although no greater quietude. Shortly after this there was a sudden change for the worse;

the pulse ran up above 200, the skin grew cool, and the marks of approaching death became visible. There was no calm at the last, but life went out amidst wild groanings and stormy tossings, about 10½ P. M.

Desiring to have the urine examined by a thorough practical chemist, I submitted it to Prof. J. M. Maisch, of the Philadelphia College of Pharmacy. The following is his report:—

"*Colour*, deep brownish-yellow. Sp. gr., 10.20. *Reaction*, slightly acid. It was mixed with three times its bulk of absolute alcohol, whereby a dirty-white precipitate occurred: colour of the mixture, light wine yellow. The precipitate thus occasioned was dried; then boiled with a small quantity of water, and filtered while boiling hot. A deposit occurred on cooling, consisting of a white powder, which, when carefully heated, fuses somewhat, decomposes, and leaves charcoal, which is gradually consumed, leaving no residue. The deposit dissolves in a larger quantity of water, the solution yielding no precipitates with metallic salts. Evaporated with dilute nitric acid, no solid residue is left behind.

"This behaviour corresponds with that of *leucin*. Liebig's test to produce valerianic acid by fusing with hydrate of potassa could not be applied, owing to the small quantity of material. These reactions indicate likewise the *absence* of *Tyrosin*.

"The liquid left after separation of *leucin* by the boiling water, showed, by the usual tests, the presence of *sulphates* and small quantities of *phosphates*, but a total *absence* of *chlorides*. Slowly evaporated, the liquid left a crystalline mass consisting chiefly of *uric acid;* the edges of this crystalline mass consisted in part of thin prismatic crystals, apparently *leucin*. This crystalline residue was tested for *tyrosin*, without success, by the following methods: Scherer's test (with nitric acid and soda); Piria's test (production of sulpho-tyrosinic acid); and R. Hoffmann's test, as modified by L. Meyer (deuto-nitrate of mercury and nitrous acid).

"To sum up, the precipitate occasioned by alcohol in the urine contains: *Leucin*, *uric acid*, *sulphates*, and small quantities of *phosphates*.

"The alcoholic liquid separated from this precipitate was treated with subacetate of lead, the precipitate filtered off and washed with alcohol.

"The precipitate, which was of a light fawn-colour, was decomposed by sulphuric acid in the presence of alcohol, filtered, and the filtrate carefully evaporated: a deep brown mass remained behind, without any sign of crystallization. Tests were applied, with negative results, for biliary acids, biliary colouring matter, chlorides, sugar, and urea; but a small quantity of phosphoric acid was observed by the proper reagents. The precipitate occasioned by subacetate of lead in the urine, previously precipitated by absolute alcohol, therefore consists chiefly of *phosphoric acid*, *urinary extractive*, and *colouring matter*, in combination with lead.

"The filtrate from this precipitate was treated with sulphuric acid to remove the excess of lead added, and the filtrate from the sulphate of lead was carefully evaporated: a syrupy brown-coloured mass remained, in which no sign of crystallization could be observed; it was diluted with little water before the following tests were applied: With nitric and oxalic acids no indications of the presence of urea were obtained. With nitrate of silver a minute turbidity of *chloride* of silver was occasioned. Pettenkofer's test carefully applied, gave a faint but readily observable change of colour characteristic of the presence of a trace of *biliary acid*. Trommer's and Boettger's tests indicated the presence of a little *sugar*. The liquid remaining after the application of these tests was concentrated and again tested for urea without avail. The filtrate from the precipitate occasioned by subacetate of lead in the urine, previously precipitated by absolute alcohol, contains *extractive*, *little sugar*, and traces of *biliary acid* and *chloride*, but no *urea*, which ought to have been contained in this portion of the material.

"In regard to the course of analysis pursued, I desire to state, that I carefully avoided, in all the different manipulations, *all* oxidizing and deoxidizing agents. The *total absence of urea* in that portion of the liquid where I had a right to look for it, was so unexpected to me that I devoted a portion of the urine, reserved in the beginning, to again test for it. It was evaporated with care, and tested in the usual way with all the necessary precautions, but it could not be found.

"I regret very much that the amount of this urine (scarcely one and a half fluidounces) was so small as to preclude the possibility of submitting larger quantities to processes for preparing some of the compounds tested for. I refer particularly to Tyrosin and biliary colouring matter. The former, if present at all, could be contained in the urine merely as a very minute trace, because none of the tests gave any indications of it in that portion of the separated constituents which ought to have contained the whole amount originally present in about six fluidrachms of the urine. Regarding the colouring matter of bile, its rapid decomposition in contact with air and during chemical manipulations, is sufficient to explain the negative results, particularly in view of the mere trace of biliary acid observed."

Perhaps it will be useful to sum up in a few words the history just given in full, and then to point out some peculiarities in the symptoms. A robust lady, twenty-one years old, near the end of the sixth month of her first pregnancy, during which she has suffered very much from severe, persistent vomiting, and has had one or two attacks threatening her life, is seized with symptoms precisely resembling those of her previous attacks; but instead of their yielding to treatment, they constantly become worse and worse, jaundice sets in on the third day, *without any fever or heat of skin*, percussion dulness over the liver lessens, symptoms of blood-poison appear, and she dies on the fifth day in a state of wild, unconscious delirium.

The general features of the case are those portrayed by Prof. Frerichs in his account of acute atrophy of the liver. None of the characteristic symptoms were wanting, excepting the deposition of a crystalline deposit of leucin and tyrosin in the urine; a chemical examination, however, of that fluid proved that leucin was largely present, though not in sufficient quantity to deposit spontaneously. Although the agreement was so complete as to identify fully the affection, yet there were some peculiar symptoms in the case which it is well to notice, to aid us in sifting out the diagnostic from the incidental symptoms of this disease.

There were no hemorrhages (except from the stomach) or petechiæ.

There were none of the peculiar oscillations of the pulse so universally observed by Prof. Frerichs.

There was no abdominal tenderness or pain.

Very few biliary products (acids or colouring matter in the urine), and tyrosin was, if present, only a trace, and there was not, at any time, a greenish sediment.

There was no headache, and not the slightest depression of spirits before or in the earlier portions of the attack.

The black vomit appeared before the jaundice, which in turn preceded all decided nervous symptoms.

Autopsy about fourteen hours after death.—Cadaver well formed; not at all emaciated; the breasts and limbs very well developed; a general bloodlessness of all the tissues very noticeable.

Thorax.—Heart rather large, its walls rather thick, with a slightly yellowish or buff-coloured tint; right ventricle containing a soft, illy-formed black clot; left ventricle without one. Muscular tissue, under the microscope, very much altered; the transverse striæ of the fibres generally having entirely disappeared, and the well-defined margins being lost. Occasionally a well-preserved fibre would offer itself, but almost the entire mass of the bundles were in an advanced stage of degeneration, presenting a granular, illy-defined structure, with innumerable small and large oil-globules through them, and longitudinal stria merely indicating the lines of separation of the primitive fibres. Under the action of acetic acid they became more transparent, and the vast number of oil-globules stood out in strong relief.

Fig. 1 represents the muscular tissue unaltered by reagents. Fig. 2 represents the shreds of tissue after the action of glacial acetic acid.

Fig. 1.

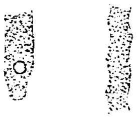


Fig. 2.

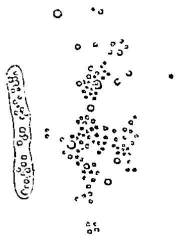
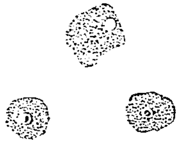


Fig. 3.



Lungs, to the eye, nearly normal; rather dry, presenting here and there patches of dark venous congestion, especially posteriorly, but mostly pinkish, everywhere crepitant. Not examined microscopically.

Blood obtained from the right ventricle, under microscope, presented nothing abnormal; when dried on a slide, no crystals were obtained.

Abdomen.—Liver remarkable for its excessive thinness, sharp edges, and its flabby texture. Very high up, its lower edge scarcely reaching to the ninth rib; of a yellowish colour, with a close, bright-red injection of the capillaries of the whole surface; on section, of a dull orange colour; no appearance of the lobules visible. Weight 2 lbs. $6\frac{1}{2}$ oz. av.; circumference 29 inches; long diameter $10\frac{1}{4}$; greatest transverse diameter $7\frac{1}{2}$; at the fissure, 6 inches; greatest thickness through right lobe, $1\frac{3}{8}$ inches; thickness of left lobe 2 inches from the edge, half an inch.

Gall-bladder full of bile; cystic, hepatic, and common ducts all perfectly pervious, as was proven by dissecting them out, and passing a probe through them.

On microscopic examination scarcely a trace of cell structure could be found. On a number of slides examined I found but a single cell, and that in a very advanced state of degeneration. Everywhere were myriads of oil-globules of all sizes, with granular matter. No crystals of leucin or tyrosin could be found.

Spleen.—Weight 71 oz.; colour rather darker than normal. Tissue decidedly softened; very friable. When a little of the pulp was placed under the microscope, numerous cells, of various shapes and sizes, filled with granules and oil-globules, and indistinct elongated bodies containing numerous granules, probably the remains of the so-called "caudate corpuscles" of the spleen filled the field of vision.

Kidneys.—Length 5¼ inches; breadth (at centre, from inner edge of hilum) 2½ inches; thickness 1⅜ inches; weight of one 6 oz. av. On section, cortical substance with a decided light yellow tint; pyramids reddish, with longitudinal streaks of darker red. The pelves of both kidneys were filled with a milky fluid, which the microscope showed to be composed of innumerable large, pavement epithelium cells, in every stage of degeneration. These must have come from the mucous membrane of the pelves themselves, and possessed the general characters of such cells, but were filled with granular matter and large and small oil-globules. (See Fig. 3.)

On microscopical examination the secreting tubules were everywhere found to be gorged with oil-globules, great and small, to the very uttermost. The secreting tissue appeared to be entirely destroyed; large oil-drops, still retaining the shape of the original cell, were the only indications of the normal gland structure that I could find.

Supra-renal capsules rather larger and softer than natural, and of a very decided yellowish tint; not examined microscopically.

Peritoneum injected.

Stomach.—Mucous membrane thickened and softened; much injected, more especially on the larger curvature near the pylorus, where there were numerous small ecchymoses of the, apparently, same dark substance so plentiful in the matters rejected.

Duodenum.—Mucous membrane softened; otherwise normal to the naked eye.

Ovaries.—Normal in general appearance, as well as in their microscopic structure, one of them containing a very well pronounced *corpus luteum.*

Uterus.—Muscular tissue seen, under the microscope, to have undergone a similar change to that of the heart-structure, although not to so great an extent. There were some oil-globules and granular matter, with a marked loss of definiteness of outline.

Remarks.—In regard to the nature of the terrible disease under consideration a number of theories have been advanced, prominent among which have been those which assume a "bilious liquefaction"—a melting down of the tissue in an excess of bile in the blood of the portal vein (Rokitansky), or in the biliary ducts and liver cells (Hensch, Von Dusch). Such suppositions seem to me so monstrous—the idea of living cells melting away in their own secretion so opposed to all modern pathology—that one almost wonders that Professor Frerichs should pause to demolish them as he does.

There is one explanation of the disease, which, from the source of its origin, and especially from the credence which it has gained, challenges our serious attention. Dr. Bright, of London, was, I believe, the first to advance it (*Guy's Hospital Reports*, vol. i. pp. 624–632), and it has been more or less fully adopted by most of the modern writers (*Frerichs*, Erster Band, p. 257; *Wood*, vol. ii. p. 576; *Aitken*, vol. ii. p. 834; *Flint*, &c.). The theory alluded to is, that the structural change of the liver is caused by some form of inflammation. Before discussing this idea of the nature of yellow atrophy, it is worthy of remark that its author, Dr. Bright, failed to grasp the peculiar, characteristic features of the affection, as is shown by his grouping under one head cases of this disease and others which were essentially different. Thus his first two cases (*Guy's Hospital Reports*, vol. i.) were simple jaundice, as it is very commonly seen, probably arising from a catarrhal inflammation of the gall-ducts, or even from a want of functional activity of the liver-cells. His third case was the result of external violence, and seems to have been an inflammation of the peritoneum, and cellular and possibly glandular structure of the viscus. The fourth case was probably the hob-nailed liver. Certainly, as he himself states, there was some chronic disease of the organ, so that it is almost impossible to decide the part the acute disease played, or whether there was any acute disease different from the chronic affection. His fifteenth and sixteenth cases appear to have suffered from the so-called acute atrophy. In his seventh case the liver was full of small abscesses; in his own words there was a very general inflammation of the substance of the liver, connected with the presence of gall-stones. The eighth case was one of "extensive suppuration of the liver."[1] These eight cases, he then says, may be considered as forming a kind of series of what may be called inflammatory, or perhaps idiopathic jaundice; but, as just stated, they are instances of at least five essentially different diseases. Surely, this being so, we can throw off any weight of authority which may belong to the inflammatory theory, especially as the best of the modern writers accept it, as it were, under protest.

According to the best developed phase of the inflammatory theory, the affection has its origin in a diffused inflammation of the glandular structure of the liver. Let me quote the words of Frerichs, as translated by Dr. Murchison. He says (p. 229, Eng. translation): "This theory was first enunciated by Bright, who described cases of the disease under the appellation of hepatitis; in recent times, Engel, Wedl, and Bambuyer, have subscribed to it, and have explained the destruction of the cells by a fatty degeneration arising from an acute exudation process. Although I have some hesitation in identifying the destruction of the hepatic cells with fatty degeneration, still I cannot but adhere to this view in so far that, according to my experience, an exudation-process constitutes the starting-point of the disease. On close examination of a liver which is undergoing acute wasting, portions are found, mostly in the right lobe, in which the morbid process has not run its entire course. We here observe not merely a remarkably congested condition of the capillaries, but in the circumference of the lobules, broad, gray bands, consisting of finely granular matter with isolated cells undergoing disintegration, while the cells nearest to the central vein still continue normal, except that they are infiltrated with bile." Allowing this last observation to be strictly correct, is it proven that this gray matter is an exudation product? In the liver of the case herein described no opportunity was presented of confirming or disproving the faithfulness of the observation—all parts of the liver seemed equally destroyed. Yet on section the liver seemed to be largely composed of grayish granular matter, and I confess that the contents of the one or two cells seen by myself appeared to be identical with this external material. For this reason I would incline to consider that these broad gray bands were the *result* of the *cell disintegration* going on in their midst, not a primary exudation—the cause of the cell change. Be this as it may, allowing the first step of the morbid change to be an exudation process, it is no proof that the process is inflammatory. Is tubercular disease inflammatory? and is not an exudation the first local manifestation? Yet this is almost the only shadow of a proof of the truth of the inflammatory theory. It appears to me, therefore, that this hypothesis bears upon its very face the Scottish verdict of "*not proven;*" and more than this, I hope to adduce proof of its falsity.

---

[1] I have been thus detailed, not so much for the reason indicated in the text, as to illustrate the way in which this affection has been confounded with others by the older writers. All the observations made prior to the appearance of Frerichs' book are of but little avail, since it is rarely certain that the cases are really those of acute atrophy. In endeavouring to arrive at a true idea of the nature of the affection, it seems to me a vital point first to eliminate all doubtful cases; under which head I would class all in which there is not distinct notice of the presence of leucin or tyrosin in the urine or liver.

In the first place *fever* is *not* one of the symptoms of the affection, although so stated in some of the recent text-books. Frerichs says (Eng. trans. p. 217): "Along with the colour, the skin was usually cool, dry, and inactive; in none of my own cases was any elevation of temperature observed. Alison and Bright likewise make particular mention of this circumstance."[1]

In the case herein described, one of the most striking features was the coolness of the skin, which was observed in *all stages* of the disease, and was accompanied, until the last few hours, with a moist, normal tongue, on which not an epithelial cell seemed ruffled; in a word, there was not a trace of a febrile movement, and this in a tolerably robust patient. May we not then set down as a character of the disease *absence* of fever? Now is it conceivable that if so large a gland as the liver was so intensely inflamed as to totally destroy it in four or five days, the system would not sympathize with it sufficiently for fever to be excited?

Secondly. Not only is fever wanting, but the peculiar local characteristics of inflammation are not present. We have not only no proof whatever, but there is no reason for supposing that there is any enlargement of the organ at any stage.

Even tenderness and pain are frequently wanting. The violent retching must of necessity cause some degree of soreness; yet, in Mrs. N. firm percussion over the liver produced no uneasy sensation whatever as long as she was conscious. Afterwards it was not tried, since touching the patient anywhere produced so much excitement that it would have been impossible to judge of the results.

The general and local symptoms differing thus *in toto* from those of inflammation, what shall we say as to the structural lesions found on *post-mortem* examination. Not only can we say with Prof. Wood, "The results of the disease are quite different from those exhibited in any other example of hepatic inflammation;" but also that they are totally unlike those of acute inflammation in any organ whatever. Allowing, for argument's sake, that the change is a mere fatty degeneration, where do we have even fatty degeneration occurring as the result of an inflammation of a few days' standing? Further, is not the metamorphosis more than a mere fatty degeneration? Even Frerichs is forced to admit this. Is it not an organic change—*sui generis*? Blood loaded with leucin and tyrosin, a liver tissue studded with crystals of the same—surely these are not the accompaniments of a mere fatty degeneration. Prof. Wood (*Pract.*, vol. i. p. 124), in speaking of tubercle not being the result of inflammation, says: "But a sufficient refutation of this opinion is, that in a vast number of cases tubercles exist without any inflammation whatever, evinced either by the symptoms or by post-mortem anatomical examination." So I would sum up our past argument; shall we grant the proposition in the one case and not in the other?

---

[1] In very thin sections the yellowish colour was scarcely apparent.

But even stronger and more convincing is the fact that the liver is not the simple seat of the disease, and probably is neither sooner nor more terribly involved than other vital organs, but merely partakes of the prevailing dyscrasia.

Jaundice is one of the most prominent symptoms of the affection, and as it is generally connected with disease of the liver, the attention of observers has been attracted to that organ, where the terrible lesions found have riveted it, and caused them to overlook important lesions elsewhere; still almost every one has noticed that the kidneys were diseased. The German professor, alluding to these organs, says (Eng. trans. p. 227): "Besides the deposit of pigment dependent upon the jaundice, I have found the glandular epithelium infiltrated with granules, and in most cases in a state of fatty degeneration, and the tissue itself flabby and shrivelled." (*Das Gewebe schlaff und welk*, p. 235, Erst. Band.) He further states that they have not received the attention they deserve, which seems true of all the organs except the liver. One of the most significant symptoms of the disease is the absence of urea from the urine, which, with the presence of urea in the blood, is irrefragable proof of utterly perverted cell action in the kidneys. Is not the retention of urea in the blood fully as serious as the retention of the bile elements—concerning which Frerichs says: "I do not here refer to the presence of the constituents of the bile, of the harmlessness of which I have convinced myself by a long series of injection experiments." The symptoms of the last 48 hours of Mrs. N. were precisely those of uræmic poisoning: the restlessness, gritting of the teeth, wild convulsive tossings, fierce screams, and utter unconsciousness, were all in perfect agreement. The microscopical examination of the kidneys proved that in her case their glandular element was as completely destroyed as that of the liver; tubules completely stripped of secreting epithelium and everywhere gorged with oil and granules, marked the common wreck. Can it be said that this death of the cells, this complete degeneration of the secreting tissue, was caused by an effort to eliminate bile poison? It seems not. The case lasted but four or five days, and at no time did the urine contain biliary colouring matter in any amount. Is not the fact of the non-presence of the bile pigment in the urine when it was loading the blood, dyeing the tissues, and oppressing the nerve-centres, fair proof that the secreting cells were already altered; that the kidney lesion was at least consentaneous with that of the liver? It seems to me, in view of these facts, it would be as proper to call the disease acute atrophy of the kidneys, or acute uræmia, as acute atrophy of the liver or acute jaundice.

I have no doubt the same change took place in the supra-renal capsules. Unfortunately, I did not at first suspect the universal alteration of cell-structure that prevailed, and these organs were not preserved for microscopic examination; but they had the peculiar appearance and softening of other organs. The mucous membrane of the pelvis of the kidneys was the only one whose epithelium was examined with the microscope. The cells were undergoing the characteristic change; they were gorged with granules and oil-globules of various sizes. The spleen tissue had not escaped; its cells were everywhere undergoing the same destructive metamorphosis; the so-called caudate corpuscle appeared to be almost entirely destroyed, or only represented by elongated formless masses of granules. Even the muscular tissue of the uterus had suffered. The heart-fibres were very far advanced in the same destruction. In short, not only were three of the most important glands destroyed, but pavement epithelium and striated muscular tissue were equally blasted. It might be argued that these were mere accidental changes in a single case. This has been answered for the kidneys. The patient was one of the last in whom a fatty heart might be looked for—young, robust, muscular. More than this, it seems evident that the same degeneration of heart-structure existed in Frerichs' cases. It is very evident from the text of his work that Professor Frerichs did not examine the heart-tissue with the microscope. In Mrs. N.'s case the heart was pronounced to be healthy, before the microscope revealed the change. Would it be an unfair inference, that if the German Professor had examined the heart-tissue, he would have found a similar degeneration? But we are not left to mere inference, for fortunately his acute observation noted abnormities which he failed to appreciate. In describing the appearance of the liver to the eye, his favourite expression is, "*schlaff und welk.*" It occurs over and over again, and is applied almost as freely to the heart-tissue. Thus, in the account of the autopsy, Obs. 14 (Erster Band, p. 210), occur the words *Das Herz schlaff und welk;* and a little further on, *Die Leber schlaff und welk.* In summing up the pathological changes of the disease (Erst. Band, p. 235), he gives as a constant lesion, "*die schlaffen, welken Bewesenheit des Herzmuskels.*" Taking these facts into consideration, it seems evident that in this disease there are consentaneous and identical structural changes in a vast number of important organs—changes, moreover, which are peculiar to the disease—totally different from those occurring in any other known affection. Is it conceivable that the links of this morbid chain should have been forged by one of their own number; that the starting-point of change so wide-spread should be a mere local disease, which in a day should involve almost every structure of the body. Can this be? It would seem not. Are we not forced to acknowledge that in the so-called yellow atrophy of the liver we have a constitutional affection of which the various structural changes are merely the local manifestations?

Considering this to be really the case, the question arises, what is the nature of the disease? Of the ultimate nature—the essence—of the various constitutional diseases we know little or nothing. All that is in our power to do, is to arrange them so as to obtain groups, the individual numbers of which are similar or in their nature identical with one another. Of all these groups the one which presents most evidently a definite idea outcropping amidst various conditions—which represents most closely a *genus* of naturalists—is the FEVERS. To this well-marked group it seems to me impossible to refer yellow atrophy.

In the first place, the most manifest and constant symptom of these diseases, that from which they derive their name—*i. e.*, *fever*—is wanting, in yellow atrophy. Secondly. All of the fevers evidently arise from the action of some specific poison derived from without, whilst in the history of the reported cases of acute atrophy there is nothing which can lead us to suspect a peculiar poison. This argument is, I am aware, not a very strong one, since so much obscurity still shrouds the origin of yellow atrophy, and yet it has seemed to me to have some force, for if there was a definite fever poison introduced into the blood from without, the disease has certainly been sufficiently studied for some of the laws of the development of the poison to be made out.

A third reason of some force is the non-contagiousness of the affection. The fourth and apparently decisive argument against the supposition that it is a fever, is derived from the fact that there is no constitutional symptom of any moment until after the destruction of gland tissue has gone so far that there is evidently blood poisoning from retention of effete substances. It is well known that in the various fevers we have evident symptoms of poisoned blood, long before the characteristic local lesions are fully developed. Thus, there are achings in the loins, back, and head, chills, fever, hot skin, dry tongue, generally perverted secretion, evident manifestations of a disturbed nervous system, and all the numerous symptoms which make up the whole of an ordinary fever; but in yellow atrophy of the liver all these are either totally wanting or else do not appear until after, and as an apparent consequence of the local disease.

If it be not a fever, what is it? It appears to me to be a member of that class of constitutional affections to which tuberculosis belongs—a rather illy defined group of affections characterized by the absence of fever and inflammation as necessary symptoms, and the magnitude of the local lesions. More in order to render my view of the pathology of this disease definite, to make any misunderstanding impossible, than with the idea that the name will not be superseded by a better one, I venture to propose to call it *Leucinosis*, since that substance is one of the chief products of the disease. If Professor Frerichs is right in his belief that the first step in the morbid local change is throwing out of a peculiar exudation, it will very strongly corroborate my view of the disease. If the possible explanation of the gray bands, given a few pages back, be found hereafter true, does it alter the case? Is it utterly disproven that even tubercle itself is the product of cell degeneration?

The only objection which occurs to my mind to the view advocated in this paper is the rapidity of the course of this affection. Granting that the disease really commences when it apparently does, if we take into consideration the number and importance of the organs concerned and the method of attack, is its course so very much more rapid than is seen in some cases of acute phthisis? In the latter affection only the lungs are attacked, and they are of such nature that immense alterations may and do take place in their structure without the suspension of their functions. In this disease, however, the organs are so attacked that their function almost immediately ceases in the part diseased, and that cessation means death.

And yet I cannot avoid here expressing a strong suspicion that the disease is not so rapid in its course as it appears; that in fact the local change goes on silently for some time before the final outburst, making a slow and sure headway—riddling the organs perhaps with disease, and yet leaving sufficient of their structure intact to prevent the induction of any very manifest symptoms until, having obtained a foothold, the local disease suddenly and rapidly increases, advancing, it may be, simultaneously from innumerable centres, and producing the characteristic symptoms of the affection. We all know how latent tubercle often is. The history of the case herein described lends sufficient probability to this surmise to make it worth while in similar cases to watch carefully for some decided proof one way or the other.

This much is certain, the patient had been vomiting constantly during her pregnancy to an extent rarely seen; that she had had two attacks closely simulating the earlier part of the fatal one, and according to her mother, in the second of these attacks (which occurred in the country), had thrown up black matters like those rejected in the fatal seizure, all these symptoms occurring without the urine being albuminous.

If ever I should meet with a similar case, I would certainly test quantatively the urine for urea, and would consider a *lessened excretion of urea* with a *non-albuminous* condition of the urine as very grave symptoms, and if *traces of tyrosin or leucin* could be found, it seems to me that almost positive proof of the commencement of the affection would be afforded.

Dr. DA COSTA said that he had listened with a great deal of interest to the remarks of Dr. Wood; and that the thoroughness with which the case had been investigated certainly rendered it a valuable addition to the literature of the subject. Yet there were some points that had been advocated which seemed to him to admit of a different explanation; and there were others which grew out of a consideration of the case, to which he begged to call the attention of the College. And in the first place it appeared to him that many instances of acute atrophy that had been reported could not be explained on the supposition of a diathesis. For instance, acute atrophy has been known to have ultimately followed obstruction of the bile ducts from cancerous deposits in the duodenum (as in Observation No. XIX. of Frerichs); or cirrhosis of the liver (as in Observation XXI., in which leucin was found in the blood and urine). It has, therefore, clearly been a sequel to cases in which the liver was already diseased, or at all events seriously interfered with in its functions. Again, what becomes of the examples of acute atrophy produced by mental emotion, such as have been described by Morgagni and others? To cite the case, so well known in medical literature, of Boerhaave, of an officer who receiving a blow was prevented by bystanders from obtaining revenge with his drawn sword, and who became jaundiced and died shortly with signs of the most marked cerebral disturbance. It is true that in some of the older cases the diagnosis of acute atrophy may be called into question. But among the most recent observers violent emotions are admitted as giving rise to the disease.

A view of the subject suggests itself that, while fully admitting the more general changes in tissue, which the case before the Society has so satisfactorily proven, yet does not set aside the primary difficulty as being in the liver. It is to suppose that these changes in other organs are produced by the altered composition of the blood—altered by the products it retains—and the disordered nutrition thus caused, fostered perhaps by the disturbed condition of the nervous system. That these structural metamorphoses would have to occur very rapidly is not an argument against this view; for do we not find in diseases running as rapid a course, and in which the blood is greatly altered, extensive tissue alterations? We know, for instance, that in yellow fever the liver is yellow, and its secreting cells filled to the utmost with fat; that it has, in other words, undergone an acute fatty degeneration. This change, first pointed out by Dr. Clark, has been constantly noticed by the speaker; but he has also found it to be associated with a granular condition of the muscular fibres of the heart, and even of the minute structure of the kidneys.

And while referring to kindred changes in yellow fever, the great similarity of the phenomena of this malady to acute atrophy may be mentioned. Not only does this similarity show itself in the pathological state just mentioned, but in the accumulation of urea in the blood, in the colour of the skin, the character of the vomit, and of other symptoms, and in the rapid progress of the disease. We can thus understand how it has happened that epidemic jaundice of grave type, amid which cases of yellow atrophy have occurred, should have been considered as yellow fever, and even—as in the notice by Garnier-Leteurrie of the epidemic of jaundice in the French army of occupation in Rome, in 1849—be considered as identical in etiology.

There is, lastly, one more point which the consideration of the case before us suggests: that many of the symptoms, particularly the abnormal nervous symptoms, are in great part due to the non-elimination of the urea. And here, again, we find that the presence or absence of albumen in the urine has little or nothing to do with the question; and that in cases of suspected uræmia the urine must be specifically tested for urea without reference to whether or not it contains albumen. But to this point Dr. Da Costa stated that he had elsewhere called attention.

Paraplegia without Discoverable Lesion of the Brain or Spinal Cord.—Dr. ISAAC NORRIS read the following account of a case:—

The interest, as well as the remarkable results of the post-mortem, he stated, must be his excuse for drawing the attention of the College for a few moments to it.

The patient, aged 45, had been for some time Orderly Sergeant of Co. E, 26th Pa. Vols., and, for bravery in the field, had been promoted to the position of First Lieutenant of his company.

At the battle of Chancellorsville, he was wounded in the left side, the ball passing in above the hip. From the fact of the wound being often inflamed, and never ceasing entirely to give him trouble, it is questionable if the ball was removed, at least entirely. The patient was unable to give any definite information on the subject.

At the battle of Gettysburg, to which he hastened when it was known that his regiment was likely to be engaged, with the usual bravery of the American soldier, although still suffering from the effects of his wound, he was unfortunate enough again to be shot down, this time receiving the wound in his left leg. The limb must have been considerably shattered, for it was eventually necessary to amputate it about a month after the injury, every attempt being made in the mean time to save it. Conservative surgery failing, it was amputated at the upper third at Little York Hospital, Dr. Snyder being the attending surgeon. After remaining there some months, he expressed a desire to go home, and was ordered to Philadelphia; he was sent by the Medical Director to Camac's Woods, where he remained, receiving the best care that the resources of a great city could command, until, the time of his regiment expiring, he was mustered out of the service. In process of time a limb was fitted to the stump, the result of a flap operation, and with practice he soon learned to walk on it, nearly as well as before the operation.

On the 19th of September, 1866, as he was returning home from receiving his pension, his wife first noticed some peculiarity in his gait, and the difficulty he experienced for a moment or two in walking, which would then go off, and remarked that some uncharitable persons not knowing the case, might think him intoxicated. This difficulty continued to increase, but he thought it was nothing, and would soon wear away. A carpenter by trade, he had given up the business since the war, and was employed at the gas works to superintend the meters; now walking from his residence, 21st and Locust, to the works at Market Street bridge, and back, daily. This he soon found quite a task, and, as he noticed each day that it became a more difficult one, he applied to me to give him, if possible, relief. Thinking the exercise beneficial, I did all I could to induce him to use the limb, and recommended also a douche of cold water, the reaction being very grateful to him. Rubefacient liniments were also applied and flannel worn next the skin. As tonics, quinia and iron were employed, as well as strychnia, this last being given not only by the stomach, but also endermically, and I thought with happy effect. The promptness with which it can be made to act renders this method a favourite one with the discriminating physician. Reading in a French author some years ago, of the beneficial effects derived from ergot in like cases, I was induced to try it here, but could not perceive any effects from it. Cantharides was also tried, but without any great benefit. The strychnia seemed to act best, and the patient was at first quite amused at the little twitchings and involuntary contractions of the muscles caused by it, especially in the amputated limb, showing that he was fully under the influence of the drug. A generous diet was also insisted upon.

Finding the trouble increasing, and that he was slowly losing the use of the limbs, a cane at this time being necessary whenever he attempted to walk, the battery was tried, and for a time with good effect. He soon got used to it, and it was then necessary greatly to increase its power to produce any effect. The lower extremities began now to be but appendages to the trunk, nearly all sensation and power having left them. That the trouble proceeded from the spine I think was proved by the irritability being so greatly diminished instead of increased, as one would have expected if the cerebrum had been involved, a distinction first pointed out by Dr. Marshall Hall. His memory also was excellent.

Being now unable to walk except with the aid of crutches, and there being some difficulty about the battery being applied daily, I recommended his seeking admission to the Pennsylvania Hospital, where he was received, and remained some weeks, his condition not improving. Becoming dissatisfied with his hospital life, and believing that his death was close at hand, he returned to his home, and again placed himself under my care. In the short time during which I had lost sight of him, he had become very much worse, and I deemed it my duty to acquaint the family with the probable result of his case. At this time he was paralyzed as high up as the breast, the abdomen being much swollen and tympanitic. He swallowed anything with great difficulty, and a little wine and beef-tea was all I could get him to take. The pulse was very feeble, and he had considerable difficulty at times in articulation, which was evidently attended with pain. The memory, and his other faculties, I did not find impaired in the slightest degree during the disease. Entire loss of sensation now existed in the limbs and lower part of the trunk, the feces and urine coming away involuntarily. The catheter, however, had occasionally to be introduced. To add to his troubles, distressing bed-sores had made their appearance, and my great object was now not so much to prolong his life, as to alleviate his sufferings, the former having ceased to be desirable. Death took place Nov. 30th, or a little over two months after his attention was first drawn to his disease.

The patient believed that the amputated limb was entirely the cause of his trouble, and from the neuralgic pains he experienced in it from time to time, the supposition was a very natural one; but the first wound in the side may, after all, have been the real cause of the difficulty. As I have said, it never ceased to give him trouble.

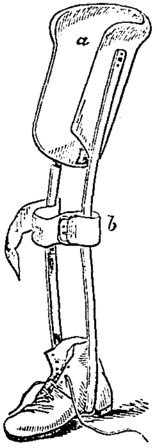
Owing to a misunderstanding, I was not present at the post-mortem, which was performed by Dr. Hare, but from notes of the case taken by Dr. William Pepper, I am indebted for the following details:—

"Only the brain and spinal cord were examined, as it grew so dark that it was impossible to continue the work, and perfectly incredible as it seems to us in the light of former experience, there was absolutely no recognizable lesion of any part of the nervous system. The spinal plexus of veins was much congested, and in one or two places the cord itself seemed too full of blood and perhaps a little stained; but the membranes were clear and smooth, the vessels of the cord healthy, the nerve tubes normal, and the nerve cells in the gray matter of the cord especially healthy. The brain tissue was also healthy. Where then are we to seek for the cause of these cases? It may be that if we had been able to make a minute examination of the ganglia of the great sympathetic nerve, we should there have found some morbid alteration to account for these otherwise unaccountable phenomena."

Splint for Incipient Hip-Joint Disease.—Dr. PACKARD exhibited a splint employed by him in a case of this kind, in which it was highly desirable that the patient, a boy five years old, should move about, and at the same time that pressure should be taken off from the hip-joint.

The child, when first seen, was pale and somewhat emaciated, with great nocturnal restlessness; the limb was drawn up and much wasted. He had received several blows and falls upon the knee and hip. Extension by means of adhesive plaster, and a sand-bag attached to a cord playing over a pulley, was used, with general remedies, until the child improved very much, and became anxious to go about. The great irritability of the adductor muscles forbade the use of the ordinary forms of splints, with a perineal band. The splint represented in Fig. 5 was therefore made by Kimball & Co., 631 Arch Street. It consists of a trough or posterior socket of vulcanized rubber (*a*), on the rounded upper edge of which the tuber ischii and buttock may rest as on a chair. This is retained by a lacing in front of the thigh (omitted in the drawing for the sake of clearness); and to it is fixed on either side, by a pivot, one end of a steel bar as light as possible to be strong enough to support the child's weight. The middle of this bar, rounded, is hinged beneath the sole of the shoe, and its two upper portions are slightly bent at the knee, so as to allow the child to sit down more conveniently. A double band (*b*) prevents the knee from coming forward too much.

Fig. 5.



When this apparatus is applied, the patient's weight is balanced on the upper rounded edge of the hard-rubber trough, and the acetabulum is entirely relieved of pressure. A little practice enables him to sit alone, as it were, with great ease and readiness. The heel is also brought down very efficiently.

Care must be taken to attach the upper ends of the bar to the hard-rubber trough at a point high enough up and far enough back, otherwise the latter will tend to rock backwards under the weight of the body, and the patient might even be in danger of having the thigh-bone broken by the pressure forward of the lower end of the trough.

The simplicity of this apparatus, its effect in taking pressure off the acetabulum, and in bringing down the heel, are the grounds upon which it is recommended to the profession for trial.

New Form of Vaginal Speculum.—Dr. GETCHELL exhibited a modification of a French instrument called Cusco's speculum. The original is a short bivalve with flat, wide blades coming together at the ends, and opening by short leaves that fold to the side and end when not in use. The theory of its operation is, that by distending the valves the vagina is taken up, thereby drawing the uterus near the vulva, which facilitates manipulation, and gives a much better view of the os than can be obtained through the cylindrical speculum, which pushes the uterus high up within the pelvis. It is also small, convenient to carry, and, bebeing simple in its construction, not likely to get out of order. We found with the original instrument that in cases where the vagina was large and much relaxed, the valves when fully expanded failed to distend the vagina sufficiently to give a view of the os. The modification consists in simply lengthening the valves about one inch, which of course allows much greater distension of the vagina. We have used this instrument in quite a large number of cases, and always found it to work satisfactorily.